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Spanish mackerel." The mouth of the adult shad is practically toothless, and multitudes of small copepods are caught in the meshes of its branchial arches.——The new Acalephs from the Tortugas and Key West, and also from the east coast of New Zealand are described and well illustrated by Mr. J. W. Fewkes in the Bulletin of the Museum of Comparative Zoölogy. Vol. x. Nos. 7 and 8.

ENTOMOLOGY.[1]

REPELLING INSECTS BY MALODORANTS.—Mr. J. A. Lintner, State Entomologist of New York, has recently published an interesting paper, in which (assuming that the parent insect is guided to her food-plant, or to that destined for her offspring by the sense of smell), he advocates the use of strong-smelling or malodorous substances, as counter-odorants to prevent noxious species from laying their eggs on cultivated plants This theory is put forth as a " new principle, in protection from insect attack."

As remarked in a notice of the paper elsewhere, we have one serious criticism to make of it, viz: that it lacks both proof and substantial foundation in fact. To give force to the theory, Mr. Lintner has to assume that substances like kerosene, coal-tar, naphthaline, carbolic acid, gas-lime, bisulphide of carbon, smoke, etc., repel by their odor ; whereas the ordinary belief that they repel because of their toxic properties seems to us far more reasonable. Our attempts to prevent the oviposition of the Cotton-worm moth, the Colorado potato-beetle, the apple-tree borers, and the Plum curculio, by the odor of carbolic acid and of coal-tar, of infusions of Ailanthus, Walnut, and decoctions of Horehound, or cabbage worms by the odor of creosote, have proved unavailing. Those of others in the same direction, and notably of Mr. I. W. Taylor, of Poland, N. Y., with such pungent odors as musk, camphor, spirits of turpentine, asafœdita, kerosene, etc. (*Rural New Yorker*, Nov. 2, 1872), used especially to prevent the oviposition of *Pieris rapæ*, equally failed of the intended result; so that, so far as experience will warrant an opinion it is adverse to the " new principle." The senses of sight, touch, and taste, which are more palpable and readily located, play their part in insect economy, and both experiment and observation would indicate that, except perhaps for certain special families, particularly of Lepidoptera, this part is greater than that represented by the sense of smell, even in guiding the female to lay her eggs.—*C. V. Riley.*

HABITS OF BITTACUS APTERUS.—Baron Osten-Sacken communicates in the *Wiener Entomologische Zeitung* (May number, p. 123) an interesting note on the above named Neuropterous insect, which is not rare in open grassy places in parts of California. He states that the insect replaces the want of wings by a great dexterity in climbing, swinging itself, monkey-like, from halm to halm, often suspended only by the front tarsi. One specimen was observed devouring a Tipula, and if this Dipteron should be the usual food of the Bittacus, the existing mimicry between the two insects would be significant, and in this particular case the more so as the Californian Tipula has, at least in the male, only rudimentary wings. According to Mr. H. Edwards's observations both species are frequently found in the same localities.

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[1] This department is edited by PROF. C. V. RILEY, Washington, D. C., to whom communications, books for notice, etc., should be sent.

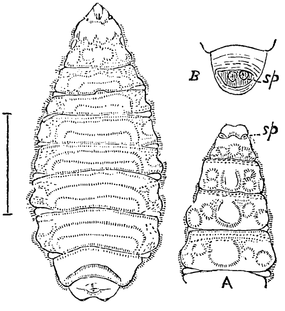
STRANGE HABIT OF METAPODIUS FEMORATUS Fab.—The "thick-thighed metapodius" is a common insect in the Southern cotton fields, attracting attention by its buzzing flight and ungainly form. The numerous observers connected with the cotton insect investigation have observed it preying upon the cotton caterpillar, while Glover states that it has been observed to injure cherries in the Western States. Mr. Schwarz informs me that he has seen it sucking the moisture from the newly dropped excrement of some unknown bird. Its eggs, according to Glover, are smooth, short, oval, and have been found arranged around a pine-leaf like a bead necklace.

In May of the present year, while studying the Northern army-worm *(Leucania unipuncta)* in the wheat fields near Huntsville, Alabama, I found that among the other new natural enemies which this Southern irruption occasioned the Metapodius was very conspicuous. Immediately upon entering the fields I was struck with its buzzing flight, and it was not long before I discovered one flying with an army-worm impaled upon its beak. Watching its flight I soon saw it alight in the line of May-weed *(Maruta cotula)*, which surrounded the field, and hastening to the point, found it busily engaged in sucking the blood of the captured worm. I was about to step closer and bottle the specimen, when it began to crawl down the branch upon which it had alighted, with that ridiculously slow and majestic motion peculiar to Reduvius and other Heteropters, until it reached a crotch where it dropped the shrivelled corpse of the worm so that it hung exactly suspended. Up to this time I had been so interested in watching this individual that I had not looked about me closely, and now I was surprised to find that the whole long line of May-weeds was fairly garnished with the empty skins of Leucania larvæ, each one hung with great nicety in some crotch. This same field I visited for three successive days, and in that time there was quite a perceptible increase in the number of the worms so placed. The sight of these suspended larvæ was certainly one of much interest, and, without seeing the great bug at work I might have puzzled over it for a long time without any satisfactory explanation.

I shall not attempt to explain this curious procedure on the part of the Metapodii. It is seemingly as unexplainable as the somewhat similar habit of the Southern loggerhead or shrike in impaling insects and other small animals upon thorns and sharp twigs. The worms are useless as further food, and certainly cannot be used as nidi for the eggs of the destroyer.—*L. O. Howard.*

HABITS OF COSCINOPTERA DOMINICANA.—Large numbers of the larvæ and pupæ of this case-bearing beetle were recently found by Professor F. H. King, at River Falls, Wis., in a large ant hill. In our account of the earlier stages of this beetle (6th Mo. Ent. Report, pp. 127–130), the larvæ, which we succeeded in feeding with old dry leaves, etc., were raised from the egg and their natural habitat remained, therefore, unknown. We have no doubt from Professor King's experience that it is an inquiline in ants' nests, especially as other species of this group, *e. g.*, the European *Clythra quadrisignata*, are known to have this habit. No North American species of the *Clythra* group has heretofore been known to live among ants, though we lately received numerous cases of a *Clythrid* larva, found in ants' nests in Arizona, by Mr. H. K. Morrison, indicating, by their peculiar form and sculpture, a species (or perhaps genus) allied to *Coscinoptera dominicana* whose larva presumably feeds upon the vegetable débris in the ant hill. What benefit the ant derives from its presence it is difficult to perceive.—*C. V. Riley.*

BOT-FLY MAGGOTS IN A TURTLE'S NECK.—The Museum of Brown University has received specimens of a bot-fly maggot, of which eight or ten were taken, according to Professor J. W. P. Jenks, from under the skin of the back of the neck, close to the shell of the box turtle *(Cistudo carolina)*. The turtle was collected at Middleboro, Mass. Fig. 1 represents the larva magnified three times, seen from beneath, *a* the anterior part of the body seen from above, and *b* the spiracles (*sp*) at the end of the body.



It appears to be a genuine bot-fly, but quite unlike any genus figured by Brauer in his work on the Œstridæ.

The body is long and slender, cylindrical, tapering so that each end is much alike. The segments are provided with numerous fine spines, which are not entirely confined to the posterior half or two-thirds of the segment. The body is slenderer and the spines much smaller than in *Gastrophilus equi.*—*A. S. Packard, Jr.*

SUN-SPOTS AND INSECT LIFE.—Mr. A. H. Swinton, in a communication to *Nature* (April, 1882, p. 584), gives a condensed table intended to show the relation existing between sun-spot cycles and the appearance of insects. A number of Lepidoptera that are rare in Great Britain, and at the same time so conspicuous as to not easily be overlooked, are selected for this purpose.

That there exists a relation between sun-spot periods and meteorological phenomena, and as a consequence between such insect phenomena as depend on meteorological conditions, will scarcely be doubted; but we do not believe that any such connection can be proved from the recorded capture of certain species even in a country like England, which, entomologically, is so thoroughly explored. However that may be, his table shows that the maximum appearance of the species enumerated follows the years of the minimum of sun-spots, and *vice versa*.

A MITE INFESTING A PORK-PACKING HOUSE.—I send you by this mail a few specimens of a mite which I do not identify by means of the literature in my reach. It is found in a pork-packing house here and seems to develop from the livers, lungs, and kidneys after they have been cooked and dried by steam. They are treated in this way to reduce to a fertilizer. Where this material lies in sacks on the floor the mite is found forming a layer half an inch thick in places.

If you are familiar with it will you be kind enough to send me its name on the enclosed card?—*W. E. Wilson, Professor Natural Science in Coe College.*

This mite proves to be *Tyroglyphus longior* Gervais, and this is the first occurrence of this species in the United States so far as we are aware.

LARVÆ OF A FLY IN A HOT SPRING IN COLORADO.—I send you a bottle containing four specimens of animal life new to me, and those to whom I have shown them. Having no works of reference I would respectfully ask you to describe them for me. They were found in Gunnison Co., Col., in a hot spring, temperature 157° F., attached to the rock by the long end at about an angle of 45° and continually moving. Having no alcohol they were put into strong alum water. The color has not materially changed. The rocks were covered with them, as well as in other springs which were examined. Any information regarding them will be thankfully appreciated.—*H. G. Griffith, 317 N. 4th street, Burlington, Iowa.*

The larvæ are of those of a species of Stratiomys, and are like those from Borax lake, California, described and figured by us in the American Journal of Science, February, 1871, p. 102. The specimens received from Mr. Griffith are much larger than those from Borax lake, and differ decidedly in the much longer and narrower terminal, anal segment; this segment in the Borax lake species is half as wide as long, with a radiating tuft of respiratory filaments; in the present species it is nearly four times as long as wide, and tapers to an obtuse point, with a transverse opening, and it is provided with minute short respiratory filaments. The head is as in the Borax lake specimens, but the body is a little more flat, and spindle-shaped, being broader in the middle and tapering more rapidly towards each end. It is of a dark horn brown. Length 37^{mm}, breadth $5\frac{1}{2}^{mm}$.—*A. S. Packard, Jr.*

DESCENT OF DYTISCUS DURING A SHOWER.—In the October No. of Vol. 3, *American Entomologist*, mention is made of a "veritable shower" of water-beetles, supposed to be a species of *Dytiscus*, as having occurred in a certain locality in Kentucky during the summer of 1880. I am reminded of this phenomenon by the singular manner in which some of my friends came into possession of two remarkably fine specimens of *Dytiscus fasciventris* Say. Just after one of our light September showers, a goblet, that had been left on the outer ledge of a window, was found pretty full of the fresh rain-water in which were swimming about, in apparent content, the two water-beetles referred to.

How they came there was the question—the opinion prevailing that they "rained down." They could not have bred within a considerable distance from the house where they alighted, and the fact that they dropped into the glass of water was also most singular. They made no attempt to escape from the glass and lived there until the water was frozen late in November. No food was given them except that the water was occasionally replenished. Is it known to be a habit of this insect to rise into the air at certain times on the approach of, or during the progress of a shower?—*Mary E. Murtfeldt, Kirkwood, Mo.*

ANTHROPOLOGY.[1]

A WELL MERITED HONOR.—It will be a source of gratification to the many friends of Professor Charles Rau, the Nestor of American archæologists, to learn that the University of Friburg has conferred upon him the honorary title of Doctor of Philosophy.

A CORRECTION.—In looking over the contents of the last number of the *American Antiquarian*, we were astonished to find that Dr. Yarrow, who has come to be our standard authority on dead Indians, should turn aside to treat of the superstitions of *live* Indians. We have the doctor's permission to state that his paper in the *Antiquarian* was upon the superstitions of the Sioux Indians.

THE WASHINGTON SATURDAY LECTURES—By the joint action of the Anthropological and the Biological Society of Washington, in February last, a course of eight free lectures at the National Museum was organized. Four of them were upon anthropology and its kindred topics, with the following titles: March 18—What is Anthropology? by Professor Otis T. Mason; April 1—Outlines of Sociology, by Major J. W. Powell; April 15—Paul Broca and the French School of Anthropology, by Dr.

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